A survey of stroke nurses' knowledge of secondary prevention lifestyle issues

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A survey of stroke nurses' knowledge and practice regarding four secondary prevention lifestyle issues: tobacco use, alcohol consumption, diet and physical activity.

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ABSTRACT

Background

Nurses have an important role to play in providing information and advice on lifestyle risk factors for recurrent stroke. However, patients report receiving little or no lifestyle information.

Aim

This study aimed to explore stroke nurses' knowledge and practice in relation to the provision of secondary prevention lifestyle information following stroke.

Design

Cross-sectional survey methods were used.

Participants and settings

Participants were members of the Scottish Stroke Nurse Forum (n=97).

Methods

A self-complete questionnaire was used to collect the data, with descriptive statistics summarising the results.

Results

Respondents stated that they assessed lifestyle risk factors following stroke; however, they focussed on some but not all risk factors. While written and verbal information and advice was provided, knowledge of guidelines and health-related recommendations was limited.

Conclusions

Stroke nurses require improved access to continuing professional development with regard to secondary prevention of stroke. They also require easy access to information resources which support evidence-based practice.

Keywords

tobacco; alcohol; diet; physical activity; secondary prevention; recurrent stroke; nursing

INTRODUCTION

Stroke is one of the most common causes of death and disability in the developed world (Mackay and Mansah, 2004). In the UK, approximately 150,000 people have a stroke each year; this includes 13,000 people in Scotland (Carroll et al, 2001; Scottish Health Statistics, 2006). Forty-five percent of this number will die, with the remainder suffering various levels of disability (British Heart Foundation, 2005). It is estimated that 300,000 people in the UK are currently living with a moderate to severe disability as a result of stroke (Adamson et al, 2004).

Stroke recurs in approximately 25% of patients during the first 5 years post-stroke, with recurrence often resulting in death, increased disability and/or institutionalisation (Redfern et al, 2006; Hankey et al, 2007). The occurrence/recurrence of stroke is associated with a disadvantaged socio-economic profile and lifestyle behaviours which include smoking, poor diet, excessive alcohol consumption and limited physical activity (Mackay and Mansah, 2004). Lifestyle risk factors for recurrence are the same as for first-ever stroke (Hankey, 2002; Chest, Heart & Stroke Scotland, 2004). The provision of information and advice that can instigate and support lifestyle change following stroke therefore has the potential to save lives and prevent the extension of disability.

Health promotion is an important aspect of nursing practice (Nursing and Midwifery Council, 2004). Stroke guidelines describe the nurse's role in providing information and education regarding healthy lifestyle behaviours (NHS Education for Scotland (NES), 2006; SIGN, 2008; Royal College of Physicians, 2009a). Current guidelines recommend that all stroke patients should be given lifestyle information and advice and that healthcare practitioners working in primary health care settings should follow up any interventions instigated in

hospital (Scottish Executive, 2002; NES, 2006). However in a recent national survey, almost half of stroke patients reported having received no information about dietary change and one third reported having received no information about physical activity (Stroke Association, 2006); another UK-wide survey found that the majority of stroke patients (54%) had received no lifestyle information at all (Healthcare Commission, 2005).

In light of the above, it was considered that an exploration of nurses' views of their provision of lifestyle interventions following stroke would be a useful addition to the current evidence base. The study reported here forms part of the evidence-gathering phase of a programme of research on nurse-led, family-centred lifestyle interventions following stroke. A systematic review of the literature revealed that there is a dearth of research in this area and therefore little evidence to inform current practice (Lawrence et al, 2009a).

Aim

This study aimed to explore stroke nurses' knowledge and practice in relation to the provision of secondary prevention lifestyle interventions following stroke.

METHODS

Study design

The study took the form a cross-sectional postal survey.

Sample

The sample was drawn from the population of registered nurses working in stroke care settings across Scotland. Specifically, they were members of the Scottish Stroke Nurse Forum (SSNF), the majority of whom are registered nurses specialising in stroke. The SSNF

membership constitutes the population of Specialist Stroke Nurses practising in Scotland and a proportion of nurses practising in Scotland who have a particular interest in stroke. However, not all of the members of the SSNF are engaged in nursing practice. Therefore, the return of completed questionnaires was sought only from members of the SSNF working currently with stroke patients and their families. At the time of the study (September 2007), there were 198 members.

Data collection

Following development of the questionnaire, its content and face validity were assessed with the assistance a panel of experts in the field of stroke, dietetics, physiotherapy, health promotion and/or questionnaire design (n=17). Some minor revisions were made to the questionnaire following comments from this group.

The questionnaire and a covering letter that provided background information, an assurance of confidentiality and instructions for returning the questionnaire, together with a pre-paid, addressed envelope were posted to the members of the SSNF. Six weeks after the initial post out, non-returners received a second questionnaire, a tactic designed to improve the response rate.

Data preparation and analysis

The data were entered into SPSS version 14. Following checks for accuracy of data entry, descriptive statistics were used to identify frequencies/valid percentages, measures of central tendency and dispersion (e.g. standard deviation), where appropriate.

Ethical considerations

Prior to the commencement of data collection, the study was approved by the Ethics Committee of Glasgow Caledonian University. Consent of the respondents was assumed by the return of a completed questionnaire. The conditions of the UK Data Protection Act (UK Parliament, 2003) were observed.

RESULTS

Response rate

The questionnaire was posted to 193 members of the SSNF; five members having been excluded as they had assisted with development and/or piloting of the questionnaire. Ninety-seven respondents returned a completed questionnaire, with an additional 16 replying that they did not have direct patient contact. The response rate was therefore 54.8%.

Demographic data

Table 1 provides information on the study participants. The majority of the respondents were female (87; 89.7%), reflecting the gender distribution of the nursing profession.

INSERT TABLE 1

The seven respondents who listed their current position under 'other' included nurses who provide telephone advice, a research nurse, a manager, a practice nurse and a nurse consultant. Fourteen of the respondents noted their place of work as 'other.' These respondents worked in assessment units, across acute care and community settings and on telephone help-lines.

Assessment of lifestyle behaviours

The stroke nurse's role should include the assessment of lifestyle risk factors (NES, 2006). Therefore, respondents were asked to record whether they routinely sought information on pre-stroke lifestyle behaviours when caring for patients who had had a stroke. While most respondents reported that they did gather this type of information, a small proportion did not consider it to be part of their role (i.e. smoking 2(2.1%); alcohol 2(2.1%); diet 5(7.6%); physical activity 10(10.8%)). As indicated, fewer nurses considered that their role involved gathering information about diet and physical activity than smoking and alcohol consumption.

Nurses have many opportunities to gather lifestyle information. Table 2 provides information on the stage/s in the patient's journey during which the respondents stated that they asked questions about lifestyle behaviours. The most common stage at which this information was sought was at the time of admission.

INSERT TABLE 2

In relation to the use of tobacco, the information most frequently recorded by the 93 respondents who answered this question was the amount of tobacco/number of cigarettes smoked per day (88, 94.6%) and the number of years as a tobacco user/smoker (65, 69.9%). Information recorded in relation to alcohol consumption included the amount of alcohol consumed per week (79, 84.9%), per day (93, 100%) and the number of days per week on which alcohol was consumed (56, 60.2%). Recording information on dietary intake was less common. Of the 88 respondents who answered this question, only 26 (29.5%) reported that they asked questions about dietary content (e.g. salt, fat intake). However, almost two-thirds

(57, 64.8%) stated that they recorded the weight of patients and 49 (55.7%) stated that they calculated patients' Body Mass Index. The level of physical activity prior to the stroke was discussed less frequently. Forty-two (50.6%) of the 83 respondents who answered this question, asked about weekly activity levels, while 31 (37.3%) asked about daily activity levels.

A minority of the respondents stated their practice in relation to the assessment of lifestyle behaviours was influenced by protocols or guidelines (smoking 14(15.1%); alcohol 12(12.9%); diet 16(18.4%); physical activity 9(10.8%)). Few respondents reported using formal assessment tools when assessing lifestyle behaviours (smoking 4(4.3%); alcohol 9(9.7%), diet 23(26.7%); physical activity 5(6%)).

Action taken if concerned about lifestyle

Respondents were asked to comment on what action/s they took if their assessment of a patient's lifestyle behaviours indicated cause for concern e.g. if a patient smoked or was drinking alcohol above recommended daily/weekly limits. As indicated in Table 3, the most common action was to record the information in a patient's notes. Referral to a specialist was also common, as was the provision of a health promotion leaflet/booklet. The responses were not mutually exclusive; many nurses reported taking more than one action.

INSERT TABLE 3

Patient education

Respondents were asked what opportunities patients had to attend specific 'health education/promotion' sessions related to lifestyle behaviours. As indicated in Table 4, a high

percentage of patients were reported as having access to one-to-one health promotion sessions. Access to group sessions was less common.

INSERT TABLE 4

Nurses' knowledge of lifestyle risk factors

A number of questions aimed to assess respondents' knowledge of three lifestyle risk factors i.e. alcohol, diet and physical activity. Smoking was not included, as smoking at any level is harmful. Respondents were asked to state what the 'sensible drinking limits' are, and to define 'healthy eating' and 'moderate physical activity'. A content analysis was performed on the responses to the two 'definition' questions. The responses are summarised below.

Alcohol

Respondents were asked to document the number of units 'per day' as stated in the Government's advice for sensible, or low-risk drinking (i.e. 3-4 units for men, 2-3 units for women). The results are presented in Table 5. As can be seen, a high proportion of participants gave responses that considerably exceed low-risk limits. However, examination of the responses suggests that these respondents may have been reporting weekly, rather than daily limits when responding to this question (i.e. 21 units for men; 14 units for women).

INSERT TABLE 5

It is of note that almost a fifth of the respondents did not answer this question (18.6%). This may reflect the fact that when asked to comment on their own knowledge of alcohol and resources available for patients, almost a quarter of the respondents were either 'not sure' of how knowledgeable they were or they considered themselves not to be knowledge (24%).

Healthy eating

Eighty-two (84.5%) respondents provided definitions of 'healthy eating', most of which (46, 56.1%) involved the use of the phrase 'balanced diet' or 'well balanced diet'. Often, respondents extended the definition by some further explanation of what food groups were thought to comprise a balanced diet e.g. 'ensuring all food groups are involved (e.g. fruit and vegetables, proteins and carbohydrates)' and 'low salt, low fat, high fibre, oily fish, fruit, a little red meat, vegetables'. Twenty-three respondents (28%) mentioned low salt and low fat as elements of a healthy diet and 20 respondents (24.4%) mentioned the government recommendation of the daily consumption of five portions of fresh fruit and vegetables (Scottish Executive, 2005). Nine respondents (11%) mentioned the need for variety; three people (3.7%) mentioned 'moderation' and seven respondents (8.5%) described the need for dietary advice that was in accordance with 'recommendations'. Seven respondents (8.5%) also described the aim of healthy eating/a balanced diet, namely to enable people to 'sustain normal function' and to 'maintain good health'/'healthy living'. One respondent described the need to avoid 'junk food'. Only one respondent (1.2%) suggested that an individual's diet should be 'enjoyable'. Fish and in particular, oily fish, was mentioned by 5 respondents (6.1%); weekly limitations on the amount of red meat were described by only one respondent (1.2%) and eating unprocessed cereal and/or pulses was mentioned by two respondents (2.4%).

For a comparison of the respondents' definitions with Government recommendation, see Lawrence et al (2009).

Physical activity

Seventy-three respondents (75.3%) described 'moderate exercise', which was defined in terms of frequency, intensity and type of activity, either separately or in combination. Twenty-one respondents (28.8%) described rates of between '1 - 2 times per week' and 30 minutes per day; the most commonly described frequency was 3 - 5 days per week (20 respondents, 27.4%). In terms of intensity, descriptions ranged between 'normal living i.e. shopping, walking, managing daily activities' and a 'form of exercise or activity which is sufficient to increase heart rate, make patient feel warm, maybe slightly out of breath'. The most commonly described activity was walking (23 respondents, 31.5%) although descriptions of the intensity with which individuals should engage in this form of exercise varied greatly. Walking was described variously as 'gentle' or 'brisk'; and 'enough to get out of breath' or 'make the heart pump vigorously for ten minutes'. Recommendations for engaging in exercise 3 - 5 days per week often were qualified (26 respondents, 35.6%), by a description specifying the need to achieve an 'increased pulse and respiratory rate'.

For a comparison of the respondents' definitions with Government recommendation, see Lawrence et al (2009).

Involving family members in discussions about lifestyle

Many respondents reported that they involved family members when assessing lifestyle behaviours of patients (smoking 70(61.9%); alcohol 82(72.6%); diet 82(72.6%); physical activity 72(63.7%)). This was most common when assessing diet and alcohol consumption. A little more than half (51, 53%) of the respondents stated that they discussed lifestyle issues with informal carers/family members, in addition to the patient.

INSERT TABLE 6

Table 6 demonstrates the level of family involvement in one-to-one and group health education/promotion sessions. As indicated, involvement in one-to-one sessions was more common than group sessions. Also, family members were most likely to be involved in discussions around the use of alcohol.

DISCUSSION

This study aimed to explore stroke nurses' knowledge and practice in relation to the provision of secondary prevention lifestyle interventions following stroke. Stroke nurses are ideally situated to assume a significant role with regard to secondary prevention as they work closely with people who have had a stroke and their families in a variety of settings (Thompson and Mitchell, 2006; Rowat et al, 2009).

The majority of respondents indicated that gathering information about pre-stroke lifestyle behaviour was part of their role. In terms of nursing actions and interventions, the most frequently reported actions were the recording of lifestyle information/assessments in patients' notes and subsequent referral to other specialists (nurses and other health professionals). The majority of nurses reported that they discussed lifestyle issues with patients and family members and that verbal information was backed up with written information in the form of health promotion leaflets.

Interestingly, while the nurses in this study state that they assess lifestyle factors and that they provide information and advice, patients and family members report receiving little or no secondary prevention lifestyle information following stroke (Healthcare Commission, 2005;

Stroke Association, 2006; Lawrence et al, 2008). This divergence of perspective is not uncommon in healthcare literature (e.g. Ellis, 2005; Smith et al, 2008).

In terms of assessment of the four lifestyle risk factors, it was notable that the majority of respondents appeared to prioritise initial assessment of alcohol and tobacco use over the assessment of diet and physical activity. The results also demonstrated that the nurses who reported delivering brief interventions appeared to prioritise smoking and diet over alcohol use and physical activity, and the nurses who reported referring patients to other specialists were most likely to do so with regard to dietary needs.

There are several possible explanations for these apparent biases. With regard to dietary referrals, the widespread adoption of the Malnutrition Universal Screening Tool (MUST) across the UK (Henderson et al, 2008) may have raised awareness amongst nurses of the need to assess nutritional status and then to refer to a dietician for further assessment and care planning. However, MUST is not a tool that enables an assessment of pre-stroke lifestyle behaviour, although it does entail measuring height and weight in order to ascertain BMI status.

With regard to the nurse respondents' apparent lack of priority with regard to physical activity, it is possible that this reflects the traditional division of roles within the multidisciplinary rehabilitation team in which motor function and therefore physical activity are perceived to be the domain of the physiotherapist (SIGN, 2006; Royal College of Physicians, 2009b). An additional consideration with regard to physical activity is the relative novelty of the concept of physical activity/exercise following stroke. Until recently, very little work had been undertaken in this area, as the focus, even within the physiotherapy profession,

has been on regaining motor function, with relatively little attention given to the development of cardio-respiratory fitness and strength for the purpose of health maintenance (Lawrence et al, 2009).

Interestingly, the apparent prioritising of the assessment and management of alcohol and tobacco use over dietary needs and physical activity reflects the results of the Stroke Association (2006) survey, in which many patients reported that they did not receive any information about diet and physical exercise.

Of some concern is the fact that only a small number of respondents reported using protocols or guidelines to inform their practice and even fewer reported using validated assessment tools. In addition, there was some confusion between guidelines and assessment tools. The respondents' knowledge of the lifestyle risk factors was variable. It is obviously difficult for nurses to advise others if they are not sufficiently knowledgeable themselves. Also, many of the participants failed to answer the questions that sought to explore their knowledge, which may suggest a lack of clarity. Findings from a recent focus group study, demonstrate that stroke nurses encounter many barriers to the identification and implementation of research-based evidence, including best practice guidelines (Rowat et al, 2009).

Limitations

A limitation of this study was the relatively small sample size. However, the sample did constitute approximately half of the target study population. The fact that the majority of respondents were senior nurses/specialist nurses (e.g. stroke nurse specialist) may limit the generalisability of the results. However, senior/specialist nurses have been identified as experts who have an important role to play in secondary prevention and therefore their

knowledge and practice are of particular interest (Thompson and Mitchell, 2006). Finally, a limitation of any survey is that accuracy of response cannot be ascertained.

CONCLUSIONS

As part of their assessment of lifestyle risk factors for recurrent stroke, nurse respondents stated that they gathered information from patients and family members. The majority of the respondents seemed to focus on assessment of patients' use of tobacco and alcohol; with regard to diet, they were more likely to refer patients to dieticians. In terms of providing information and education, the majority of respondents reported providing written and verbal information. However, nurse respondents' generalised and limited knowledge of specific aspects of contemporary guidelines and health-related recommendations suggests that clinically active nurses may have limited opportunities to access research-based evidence and to implement evidence-based care. This may affect the quality of information and advice shared with patients and their families.

These two related issues highlight the need to tackle barriers faced by stroke nurses who wish to access the best available evidence and implement evidence-based care regarding secondary prevention lifestyle issues (Rowat et al, 2009). Clearly, stroke nurses require improved access to continuing professional development with regard to the secondary prevention of stroke and improved access to information resources, which support evidence-based practice.

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Table 1 – Demographic information (respondents)

Age (n=91)		**Current position (n=97)**	
21-30 yrs	3 (3.3%)	Charge nurse/ward manager	28 (28.9%)
31-40 yrs	26 (28.6%)	Sister	2 (2%)
41-50 yrs	46 (50.6%)	Staff nurse	22 (22.7%)
51-60 yrs	16 (17.6%)	Stroke coordinator/liaison	24 (24.7%)
Mean 43.6yrs (SD 7.14) Range 24-56yrs		Stroke nurse specialist	14 (14.4%)
		Other	7 (7.2%)
Years of experience in stroke field (n=95)		**Place of work (n=96)**	
1-5 yrs	26 (27.4%)	Stroke unit	44 (45.8%)
6-10 yrs	29 (30.5%)	Medical ward	2 (2.1%)
11-15 yrs	24 (25.3%)	Care of the elderly ward	8 (8.3%)
16-20 yrs	6 (6.3%)	Out-patient department	2 (2.1%)
21+ yrs	10 (10.5%)	Day hospital	3 (3.1%)
Mean 10.58yrs (SD 6.63) Range 1-34yrs		Community/primary care	24 (25%)
		Other	13 (13.5%)

Table 2 – Timing of gathering information on lifestyle

	Admission	Care planning	Transfer	Discharge
Smoking (n=95)	88 (92.6%)	32 (33.7%)	10 (10.5%)	19 (20%)
Alcohol (n=95)	87 (91.6%)	42 (44.2%)	22 (23.2%)	18 (18.9%)
Diet (n=92)	74 (80.4%)	45 (48.9%)	17 (18.5%)	16 (17.4%)
Physical activity (n=93)	75 (80.6%)	41 (36.3%)	17 (15.0%)	19 (16.2%)

Table 3 – Action taken if concerned about lifestyle risk factors

	Records in patient notes	Brief Intervention	Refers to specialist	Advice line telephone number	Information leaflet
Smoking (n=93)	85 (91.4%)	44 (47.3%)	56 (60.2%)	14 (15.1%)	54 (58.1%)
Alcohol (n=87)	79 (84.9%)	35 (37.6%)	53 (57%)	7 (7.5%)	56 (60.2%)
Diet (n=93)	62 (71.3%)	38 (43.7%)	76 (87.4%)	3 (3.4%)	56 (64.4%)
Physical activity (n=84)	54 (64.3%)	29 (34.5%)	47 (56%)	N/A	42 (50%)

Table 4 – Provision of health education/promotion sessions for patients

n=96	Group sessions	1 to 1 sessions
Smoking	29 (30.2%)	78 (81.2)
Alcohol	15 (15.6%)	76 (79.2%)
Diet	9 (9.4%)	77 (80.2%)
Physical activity	21 (21.9%)	70 (72.9%)

Table 5 – Knowledge of daily levels of alcohol consumption unlikely to cause risks to health

Men (n=79)		Women (n=79)	
2 units	5 (6.3%)	1 unit	6 (7.6%)
3 or 4 units	43(54.4%)	2 or 3 units	43 (54.4%)
5 units	2 (2.5%)	4 units	1 (1.3%)
21 units	26 (32.9%)	14 units	26 (32.9%)
24 units	1 (1.3%)	15 units	1 (1.3%)
28 units	1 (1.3%)	21 units	2 (2.5%)
30 units	1 (1.3%)		

Table 6 – Provision of health education/promotion sessions for family members

n=94	Group sessions	1 to 1 sessions
Smoking	12 (12.8%)	54 (57.4%)
Alcohol	9 (9.6%)	76 (79.2%)
Diet	8 (8.5%)	57 (60.6%)
Physical activity	9 (9.7%)	57 (60.6%)